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10/584,732

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EXAMINER

MAYO-PINNOCK, TARA LEIGH

ART UNIT

PAPER NUMBER

3671

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/584,732 | Applicant(s) ZIVANOVIC ET AL. | |
| | Examiner TARA MAYO-PINNOCK | Art Unit 3671 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20061201, 20070301</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it is not limited to one paragraph and includes legal phraseology. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

3. The prior rejections of claims 18 through 20 under 35 USC §112, second paragraph have been overcome by the response filed 11 September 2009.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 2, 8 through 11, 16, 19, 25 through 27 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "principally" in claim 2 is a relative term which renders the claim indefinite. The term "principally" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Claim 16 is similarly rejected for the recitation of "remain roughly constant" on lines 2 through 3.

Regarding claim 8, the phrase "in particular" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. Claims 25, 26 and 35 are all similarly rejected for the recitation of "for example."

With regard to claim 10, the scope of the claimed invention is rendered indefinite by the recitation of "the forward moving speed" because it is not understood to which element Applicant is referring with the recitation.

Claim 10 recites the limitation "said second running speed" on lines 2 through 3. There is insufficient antecedent basis for this limitation in the claim. Claim 19 is similarly rejected for the recitation of "said band roll" on lines 1 through 2.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1 through 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (U.S. Patent No. 4,415,390 A) in view of French Patent Document No. 0404833.

Smith '390, as seen in Figures 1 through 3, discloses a method for reinforcing an embedded cylinder pipe (24) by applying a composite structural reinforcement within the pipe through in situ stratification of at least one band (64) of reinforcement fibers and an adhesive (70) comprising the steps of:

with regard to claim 1,

applying said band onto a contact area on an internal face (25) of said pipe by means of a contacting member (71);

moving said contacting member along an helical path so that said contact area follows said path; and

moving a main pressing member (35) behind said contacting member along said path to apply pressure to said band in a main pressure area separated from said contact area;

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with regard to claim 5,

further comprising the step of moving a coating member (72) along said helical path in a coating area forward said contact area;

with regard to claim 11,

the formula recited therein is inherent met by the operational speed of Smith '390;

with regard to claim 12,

wherein the contacting member is adjustable;

with regard to claim 13,

where the contacting member includes a roller driven by a wheel (35);

with regard to claim 14,

where the band is unwound from a roll (63) prior to contacting the internal face of the pipe;

with regard to claim 15,

where the tension of the unwound band is regulated; and

with regard to claim 16,

wherein the pressure in the main pressure area is regulated and remains “roughly constant” along the helical path.

Smith '390 fails to teach:

with regard to claim 1,

the adhesive being a resin or a resin including matrix; and

with regard to claim 2,

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the band composed of carbon fibers;
with regard to claim 3,

the band being made from fabric;
with regard to claim 4,

the band being pre-impregnated with at least a resin or resin including matrix;
with regard to claim 5,

coating the internal face of the pipe with a resin or resin including matrix;
with regard to claims 6 and 37,

moving a coating member along the helical path and coating the previously applied band on the internal face of the pipe with a resin or resin including matrix in a coating area behind the contact area and applying pressure through a secondary pressing member to the band in a secondary pressure area situated behind the main pressure area;
with regard to claim 7,

the resin or resin including matrix the product of mixing at least unpolymerized resin and a hardening agent just before the coating step;
with regard to claim 8,

the speed at which the band is pressed against the internal face being at least 90% of the speed the band is fed to the contact area;
with regard to claim 9,

the speed at which the band is pressed against the internal face being 98% to 99% of the speed the band is fed to the contact area;
with regard to claim 10,

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the forward moving speed along the axis of the pipe of the stratification process being driven by the speed the band is pressed against the internal face of the pipe; and with regard to claim 36,

the band being a unidirectional fabric.

French Document '833 discloses a method of reinforcing an embedded cylindrical pipe comprising the steps of applying a resin or resin including matrix (Claim 1) and a fabric band of carbon fibers (Claim 2), wherein the band is pre-impregnated with at least resin or resin including matrix (Page 6, lines 18 through 23).

With regard to claim 1, it would have been obvious to one having ordinary skill in the art of pipes at the time of invention to modify the method disclosed by Smith '390 such that the adhesive would comprise a resin or resin including matrix as taught by French Document '833. Specifically, one having ordinary skill in the art of pipes would have had a reasonable expectation of success since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions.

With regard to claims 2 through 4 and 7, it would have been obvious to one having ordinary skill in the art at the time of invention to modify the method of Smith '390 with the substitution of the band disclosed by French Document '833 for the membrane (64). Specifically, one having ordinary skill in the art of pipes would have had a reasonable expectation of success at the time of invention since all the claimed elements were known in the

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prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions.

With regard to claim 5, the combination of Smith '390 and French Document '833 fails to teach the step of coating the internal face of the pipe forward the contact area. However, it would have been an obvious expedient to modify the prior art method such that it would include the step of coating the internal face of the pipe to provide further reinforcement to the internal face of the pipe since the modification would have merely amounted to a greater amount resin on the internal surface.

With regard to claims 6 and 37, the combination of Smith '390 and French Document '833 fails to teach steps of moving a coating member and coating the previously applied band with a resin or resin including matrix, and the step of applying pressure through a secondary pressing member. However, it would have been obvious to one having ordinary skill in the art at the time of invention to modify the method taught by the prior art combination since it would have merely amounted to a duplication of steps and obtained predictable results.

With regard to claim 7, the combination of Smith '390 and French Document '833 fails to teach step of mixing an unpolymerized resin and a hardening agent before performing the step of coating. However, it would have been obvious to one having ordinary skill in the art at the time of invention to modify the prior art method such that it would include the step of mixing as claimed since it would have merely required providing the mixture in its component parts and obtained predictable results.

With regard to claims 8 and 9, the combination of Smith '390 and French Document '833 fails to disclose the ratio of the speed which the band is pressed to the internal face to the speed

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which band is fed to the contact area. However, it would have been obvious to one having ordinary skill in the art at the time of invention to determine an optimal ratio, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimal or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Similar rationale is applied to the rejection of claim 10.

With regard to claim 36, the combination of Smith '390 and French Document '833 fails to teach the band being formed from unidirectional fabric; however, it would have been an obvious expedient at the time of invention for one in the art of pipes to make the band of unidirectional fabric since the examiner takes Official Notice of the extensive use of unidirectional fabrics for reinforcement.

With specific regard to claims 17 through 35, the structural limitations recited therein are taught by the combination of Smith '390 and French Document '833.

Response to Arguments

9. Applicant's arguments, see the Remarks, filed 11 September 2009, with respect to the rejection(s) of claim(s) 1 through 37 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of French Patent Document '833.

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Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TARA MAYO-PINNOCK whose telephone number is (571) 272-6992. The examiner can normally be reached on Monday through Friday 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will can be reached on 571-272-6998. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TARA MAYO-PINNOCK/
Primary Examiner, Art Unit 3671

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31 January 2010